

REMARKS

In the Office Action, dated April 17, 2003, the Examiner states that Claims 1-8 are pending, Claims 1-6 are rejected and Claims 1-8 are objected to. By the present Amendment, Applicant amends the specification and the claims.

In the Office Action, Claims 1-8 are objected to for an informality in Claim 1, line 10. The Applicant has amended the claim as suggested by the Examiner to overcome the objection.

In the Office Action, the title is objected to as not being descriptive. The Applicant has amended the title as --DEVICE FOR PROVIDING A PRESSURIZED SOLUTION TO AN APPLYING DEVICE--.

In the Office Action, Claims 1-5 are rejected under 35 U.S.C. §102(b) as anticipated by Raphael (US 5,383,574). Claims 2 and 6 are rejected under 35 U.S.C. §103(a) as unpatentable over Raphael in view of Llang (US 6,245,148). The Applicant considers that these rejections have been overcome by the amendment of the claims.

The present invention defined in amended Claim 1 relates to a device for providing a solution for a color filter. On the contrary, the device disclosed in Raphael relates to a device for dispensing liquid for semiconductor processing chemicals (see column 2, lines 59-62).

In the semiconductor process, a circular wafer of 7 inches width in a diagonal direction is used, and a few thousand tips are formed thereon. Therefore, if bubbles generated in the dispensing device causes a defect on a wafer, only a few tips among thousands of tips become defective, so that the yield of the tips may merely be decreased by within 1%.

On the contrary, in the technical field of a color filter, a substrate of the size that is greater than 1 meter in the diagonal direction is generally used, and four plates may be formed on a substrate of that size. If the probability of bubble defects is maintained at the same level as in the case of producing semiconductors, the yield may nearly be 0%, resulting in no use. Accordingly, in the field of color filter production, it is necessary to suppress the probability of occurrence of bubble defects by three orders in comparison with the field of production of a semiconductor.

In the present invention defined in Claim 1, there is provided a middle tank for each of the sources of supply. Namely, in the present invention defined in Claim 1, the sources of supply communicate with respective middle tanks. Accordingly, it is possible to immediately change a middle tank to another one when the sensor for the middle tank detects bubbles or a low liquid level. Therefore, the probability of occurrence of bubble defects is kept at an extremely low level, and the rate of operation is maintained at a high level without interrupting production.

If there is provided only one middle tank for all sources of supply, a large quantity of sensitive matter is required between the sensing position of the bubble or liquid level sensor for the middle tank and the liquid supply port of that tank (in other words, to keep sufficient distance between the sensing position and the liquid supply port) in order to prevent the bubbles from being fed to the pump. However, if the sensor is disposed at an upper side of the middle tank to increase the distance between the sensing position and the liquid supply port, the distance from the sensing position to the top of the middle tank decreases, so that the sensor may frequently detect bubbles and the supply of liquid may be frequently stopped. To solve such a problem, it is required that the size of the middle tank be enlarged and the sensor be disposed on the middle portion of the tank. However, such a solution causes the middle tank to have the same problems as those that occur with the sources of supply.

Accordingly, it is very important to provide a middle tank for each of the sources of supply in a device for providing a solution for a color filter that requires an extremely accurate bubble control, thereby achieving the objective of the present invention. Therefore, the Applicant believes that the present invention defined in amended Claim 1 is not anticipated by Raphael which merely discloses the field of producing a semiconductor that requires controllability of bubbles at a low level.

Since Claims 2 to 6 are dependent on amended Claim 1, Claims 2 to 6 are considered to be in allowable condition.

Claim 7 has been rewritten in independent form, including all of limitations of original Claim 1. The Applicant considers Claims 7 and 8 to also be in an allowable condition.

In light of the foregoing response, all the outstanding objections and rejections have been overcome. Applicant respectfully submits that this application

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should now be in better condition for allowance and respectfully requests favorable consideration.

Respectfully submitted,

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